

## CLAIMS

1. A method of producing a diol derivative, comprising a step of obtaining an  $\alpha$ -hydroxycarboxylic acid ester by reacting (i) one or more 1,2-diols or (ii) a 1,2-diol and a primary alcohol as starting material(s) with oxygen in the presence of a catalyst comprising metal loaded on a carrier.

2. The method according to claim 1, wherein the metal loaded on the carrier is a metal other than gold.

3. The method according to claim 1, wherein ethylene glycol and a primary alcohol are used as the starting materials.

4. The method of producing a diol derivative according to claim 1, further comprising a step of hydrolyzing the obtained  $\alpha$ -hydroxycarboxylic acid ester to obtain an  $\alpha$ -hydroxycarboxylic acid.

5. The method according to claim 4, wherein the metal loaded on the carrier comprises gold and at least one metal other than gold.

6. The method of producing a diol derivative according to claim 4, further comprising a step of subjecting the obtained  $\alpha$ -hydroxycarboxylic acid to polycondensation to obtain

polyglycolic acid.

7. The method according to claim 6, further comprising a step of subjecting the obtained polyglycolic acid to further polycondensation to produce polyglycolic acid having a higher molecular weight.

8. The method according to claim 6, further comprising a step of subjecting the obtained polyglycolic acid to depolymerization to obtain glycolide.

9. The method of producing a diol derivative according to claim 1, further comprising a step of subjecting the obtained  $\alpha$ -hydroxycarboxylic acid ester to polycondensation to obtain polyglycolic acid.

10. The method according to claim 9, further comprising a step of subjecting the obtained polyglycolic acid to further polycondensation to produce polyglycolic acid having a higher molecular weight.

11. The method according to claim 9, further comprising a step of subjecting the obtained polyglycolic acid to depolymerization to obtain glycolide.

12. The method according to claim 9, wherein the metal

loaded on the carrier comprises gold and at least one metal other than gold.

13. A glycolic acid ester substantially not containing formaldehyde and chlorine as impurities.

14. Glycolic acid substantially not containing formaldehyde and chlorine as impurities.

15. Polyglycolic acid substantially not containing formaldehyde and chlorine as impurities.